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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,087	03/30/2004	Akitaka Makino	648.43120CX1	3009

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ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER

MOORE, KARLA A

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 01/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/812,087

Applicant(s)

MAKINO ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 7-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,889,627 to Hao in view of U.S. Patent No. 5,641,375 to Nitescu et al.

3. Hao discloses a vacuum processing apparatus substantially as claimed and comprising: a vacuum container (Figures 3A and 3B, 104) in which an inside thereof is evacuated and in which a wafer is processed using plasma therein (column 4, rows 6-10); an inner chamber (102) disposed inside the vacuum container and having an inner space in which a processing gas is supplied, the inner chamber having an axisymmetric structure; a side wall delimiting a part of the inner chamber and having an opening (opening in liner aperture plate, 110) disposed therein through which the wafer to be supported on the wafer table is passed; a gate (opening in process chamber, 104) so as to enable communication with the opening in the side wall of the inner chamber so as to enable transfer of the wafer from outside of the vacuum container through the opening in the sidewall; and a valve (110) disposed between the opening in the side wall and the gate, the valve being movable with respect to the outside of the side wall of the inner chamber so as to open and close the opening and for sealing the opening in an airtight manner, a portion of the valve having a shape which does not interfere with the axisymmetric structure of the inner chamber.

4. However, Hao fails to explicitly teach the inner chamber is detachable disposed with respect to the vacuum container so as to enable lifting up of the inner chamber from the vacuum chamber.

5. Nitescu et al. teach the use of a flexible, removable shield *inner ch.* for a plasma chamber for the purpose of protecting the inner walls of a plasma processing reactor (column 2, rows 10-18). The liner is liftable

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through the top of the reactor when the lid is removed so that the liner can be replaced (column 3, rows 25-31 and column 6, rows 28-34, 57-63).

6. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have the inner chamber detachably disposed with respect to the vacuum container so as to enable lifting up of the inner chamber from the vacuum chamber in Hao in order to replace the protecting liner as taught by Nitescu et al.

7. Hao further fails to explicitly teach the inner space comprises a wafer table for supporting the wafer.

8. Nitescu et al. teach the use of pedestal in a processing inner space for the purpose of holding a wafer during processing (column 3, rows 49-50).

9. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a pedestal in the processing inner space in Hao in order to hold the wafer during processing as taught by Nitescu et al.

10. With respect to claim 8, a portion of the valve has a shape so that when the valve closes the opening in the sidewall unevenness of an inner surface of the inner chamber is reduced (see Figure where the valve, 144 is curved).

11. With respect to claims 9 and 10, the combination of Hao and XXX teaches a detachable and liftable inner chamber. Hao further discloses a driver (Figures 4A-E, actuator, 130; column 6, rows 28-29) for enabling movement of the valve.

12. With respect to claims 11-14, the valve is movable in both vertical and horizontal directions (column 6, rows 28-29).

13. With respect to claims 15 and 17, the apparatus further comprises another valve (514) disposed outside of the gate, the another valve being movable so as to open and close the gate and enable sealing of the gate in an airtight manner.

14. With respect to claims 16 and 18, the another valve when closing the gate enable sealing of the gate in an airtight manner while the inner chamber is removed from the vacuum chamber. As noted

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above, the another valve closes in an airtight manner. If desired (i.e. if an intended processing method called for the step), the inner chamber could be removed while the another valve remained sealed.

Examiner notes that the courts have ruled that A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

15. With respect to claim 19, the valve has a shape so that a portion thereof is insertable within the opening of the inner chamber for airtightly sealing the opening and to reduce unevenness on an inner surface of the inner chamber reduced (see Figure where the valve, 144 is curved).

#### ***Response to Arguments***

16. Applicant's arguments with respect to claims 7-19 have been considered but are moot in view of the new ground(s) of rejection. Hao and Nitescu et al. teach the claimed invention as newly amended.

#### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 9:00 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore  
Patent Examiner  
Art Unit 1763  
19 December 2005